



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Apple et. al.

Serial No. 09/980,437

Filed: November 30, 2001

For: USE OF GABAPENTIN IN ASSAYS TO IDENTIFY  
BABAB RECEPTOR AGONISTS, INVERSE  
AGONISTS, ANTAGONISTS, AND ALLOSTERIC  
MODULATORS OF AGONISTSArt Unit: 1623Examiner: TO BE ASSIGNEDCommissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR 1.97

Sir:

1. In compliance with 37 C.F.R. 1.97, submitted on the attached form herewith is a list of patents, publications or other information which are requested to be made of record in this application. This Information Disclosure Statement is not an admission that any patent, publication or other information referred to herein is "prior art" for this invention. In accordance with 37 C.F.R. 1.97(h), the filing of this Information Disclosure Statement shall not be construed to be an admission that the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. 1.56(b).

2. In accordance with 37 C.F.R. 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made.

3. Applicants respectfully request that the Examiner initial the attached form after reviewing the pertinence of each reference.

4. Pursuant to the waiver by the Office of the requirement under 37 CFR 1.98 (a)(2)(i) dated July 11, 2003, if the filing date of this application is after June 30, 2003, copies of each cited U.S. patent and each U.S. patent application publication are not enclosed herewith.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on the date appearing below.

MERCK &amp; CO., INC.

By [Signature] Date 5/18/04

**INFORMATION DISCLOSURE STATEMENT**

5. Pursuant to 37 C.F.R. 1.98(d), copies of references listed on the attached form that were submitted to or cited by the Office in a related application upon which the instant application relies for an earlier filing date under 35 U.S.C. 120 are not enclosed. Related application(s) in which references were submitted to or cited by the Office are as follows:

RELATED APPLICATION		
U. S. SERIAL NUMBER	FILING DATE	MERCK CASE

If this is inconvenient, additional copies will be submitted upon request.

6. In accordance with 37 C.F.R. 1.97, (check one)

- ☐ the attached information is filed within three months of the filing date of the captioned case.
- ☒ the attached information is filed more than three months after the filing date but prior to the mailing of a first Office Action on the merits.
- ☐ the attached information is being filed more than three months after the filing date and after the mailing of a first Office Action on the merits, but before the mailing date of a Final Action or Notice of Allowance. The enclosed authorization is therefore given to charge Deposit Account No. 13-2755 for the fee required under 37 C.F.R. 1.17(p).
- ☐ the undersigned certifies that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement.
- ☐ the undersigned certifies that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated under 37 C.F.R. 1.56(c) more than three months prior to the filing of this Statement.

Respectfully submitted,



By: Vineet Kohli

Attorney \_\_\_\_\_ For Applicant(s)

Reg. No. 37,003

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Date: 5/19/04

Substitute for form 1449B/PTO

# INFORMATION DISCLOSURE

## STATEMENT BY APPLICANT

### COMPLETE IF KNOWN

Application Number	09/980,437
Filing Date	November 30, 2001
First Named Inventor	Ng et. al.
Group Art Unit	1623
Examiner Name	
Attorney Docket Number	20395P

(use many sheets as necessary)

1 of 4

### NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author, title, date, page(s), volume-issue number(s) and place of publication.
	A	Goldin, A.L. "Maintenance of Xenopus laevis and Oocyte Injection", Methods in Enzymology, Vol 207, pp.266-279 (1992)
	B	Watson, J. et al., "Molecular Biology of the Gene", The Benjamin/Cummings Publishing, Inc., Fourth Ed., pp 226-238, (1987)
	C	Quick, M. & Lester, H.A. "Methods for Expression of Excitability Proteins in Xenopus Oocytes", Meth. Neurosci., Vol 19, pp 261-279 (1994)
	D	Joshi, S. et al., "Stimulation of phospholipase C by the cloned $\mu$ , $\delta$ and $\kappa$ opioid receptors via chimeric $G\alpha q$ mutants", European Journal of Neuroscience, Vol. 11, pp 383-388 (1999)
	E	Lerner, M.R. "Tools for investigating functional interactions between ligands and G-protein-coupled receptors", Elsevier Science Ltd., Vol. 17 pp142-146 (1994)
	F	Potenza, M. N. "A Rapid Quantitative Bioassay for Evaluating the Effects of Ligands Upon Receptors That Modulate cAMP Levels in a Melanophore Cell Line", Pigment Cell Research, Vol 5 pp 372-378 (1992)
	G	Bowery, N., "GABA <sub>B</sub> receptors and their significance in mammalian pharmacology", Elsevier Science, Vol. 10 pp 401-407 (1989)
	H	Misgeld, U. et al., "A Physiological Role for GABA <sub>B</sub> Receptors and the Effects of Baclofen in the Mammalian Central Nervous System", Progress in Neurobiology, Vol 46 pp 423-462 (1995)
	I	Taylor, C. P. et al., "A Summary of mechanistic hypotheses of gabapentin pharmacology", Epilepsy Research, Vol 29 pp 233-249 (1998)
	J	Pearson, W. R. et al., "Comparison of DNA Sequences with Protein Sequences", Genomics, Vol 46, pp 24-36 (1997)
	K	Buhl, A.M. et al., "Selective coupling of the human anaphylatoxin C5a receptor and $\alpha$ in human kidney 293 cells", Elsevier Sci. Pub B.V., Vol 323, pp 132-134 (1993)
	L	Jones, K.A. et al., "GABA <sub>B</sub> Receptors function as a heteromeric assembly of the subunits GABA <sub>B</sub> R1 and GABA <sub>B</sub> R2", Nature, Vol 396, pp 674-679 (1998)
	M	Kaupmann, K. et al., "GABA <sub>B</sub> - receptor subtypes assemble into functional heteromeric complexes", Nature, Vol 396, pp 683-687 (1998)
	N	White, J. H. et al., "Heterodimerization is required for the formation of a functional GABA <sub>B</sub> receptor", Nature, Vol 396, pp 679-682 (1998)
	O	Ng, Samuel S.M. et al., "Real-Time Evaluation of Human Secretin Receptor Activity Using Cytosensor Microphysiometry", J. of Cellular Biochemistry, Vol 72 pp 517-527 (1999)

Examiner Signature

Date Considered

\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Application Number 09/980,437

Filing Date November 30, 2001

First Named Inventor Ng et. al.

Group Art Unit 1623

Examiner Name

Attorney Docket Number 20395P

Sheet 2 of 4

### NON PATENT LITERATURE DOCUMENTS

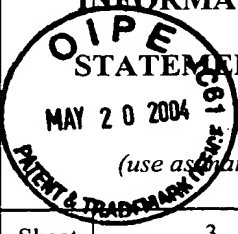
Examiner Initials*	Cite No.	Include name of the author, title, date, page(s), volume-issue number(s) and place of publication.
	P	Gonzalez, J. E. & Tsien, R.Y., et al., "Improved indicators of cell membrane potential that use fluorescence resonance energy transfer", Vol, No., 4 4 pp 269-277 (1997)
	Q	Rutter, G.A., et al., "Real-time imaging of gene expression in single living cells", Chemistry & Biology, Vol 5, No. 11, pp R285-R290 (1998)
	R	Fischer, H. et al., "New Drugs for the Na <sup>+</sup> /H <sup>+</sup> Exchanger. Influence of Na <sup>+</sup> Concentration and Determination of Inhibition Constants with a Microphysiometer", J. Membrane Biology, Vol 168, pp 39-45 (1999)
	S	Amatruda, T.T., et al., "Specific Interactions of Chemoattractant Factor Receptors with G-proteins", J. Biology Chemistry, Vol 268, No. 14, pp 10139-10144 (1993)
	T	Ng, G.Y.K. et al., "Identification of a GABA <sub>B</sub> Receptor Subunit, gb2, Required for Functional GABA <sub>B</sub> Receptor Activity", J. Biological Chemistry, Vol. 274 pp 7607-7610 (1999)
	U	Kuner, R., et al., "Role of Heteromer Formation in GABA <sub>B</sub> Receptor Function", Science, Vol. 283 pp 74-77 (1999)
	V	Brown, J.P. & Gee, N.S., "Cloning and Deletion Mutagenesis of the $\alpha_2\delta$ Calcium Channel Subunit from Porcine Cerebral Cortex", J. Biology Chemistry, Vol. 273, No 39, pp 25458-25465 (1998)
	W	Ziokarnik, G. et al., "Quantitation of Transcription and Clonal Selection of Single Living Cells with $\beta$ -Lactamase as Reporter", Science, Vol. 279 pp 84-88 (1998)
	X	McKee, K.K., "Molecular Analysis of Rat Pituitary and Hypothalamic Growth Hormone Secretagogue Receptors", Molecular Endocrinology, Vol. 11, No 4, pp 415-423 (1997)
	Y	Yokomizo, T. et al., "A G-protein-coupled receptor for leukotriene B <sub>4</sub> that mediates chemotaxis", Nature, Vol. 387 pp 620-624 (1997)
	Z	Brock, J.A. et al., "Contribution of $\alpha$ -adrenoceptors to depolarization and contraction evoked by continuous asynchronous sympathetic nerve activity in rat tail artery", British Journal of Pharmacology, Vol 120, pp 1513-1521 (1997)
	AA	Graminski, G. F., "Pigment Dispersion in Frog Melanophores Can Be Induced by a Phorbol Ester or Stimulation of a Recombinant Receptor That Activates Phospholipase C*", J. Biological Chemistry, Vol. 268, No 8, pp 5957-5964 (1993)
	AB	Offermanns, S. & Simon, M. I. et al., "G $\alpha_{15}$ and G $\alpha_{16}$ Couple a Wide Variety of Receptors to Phospholipase C*", J. Biology Chemistry, Vol. 270, No 25 pp 15175-15180 (1995)
	AC	Herbert, T. E., "Voltage dependencies of the fast and slow gating modes of RIIA sodium channels", Proc. The Royal Society London B, Vol. 256 pp. 253-261 (1994)
	AD	Rowbotham, M. et al., "Gabapentin for the Treatment of Postherpetic Neuralgia", JAMA, Vol. 280 pp 1837-1842 (1998)

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Substitute for form 1449B/PTO			<b>COMPLETE IF KNOWN</b>		
<b>INFORMATION DISCLOSURE          STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Application Number</b>	09/980,437	
			<b>Filing Date</b>	November 30, 2001	
			<b>First Named Inventor</b>	Ng et. al.	
			<b>Group Art Unit</b>	1623	
			<b>Examiner Name</b>		
<b>Sheet</b>	3	of	4	<b>Attorney Docket Number</b>	20395P

NON PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No.	Include name of the author, title, date, page(s), volume-issue number(s) and place of publication.
	AE	Krapivinsky, G. et al., "The G-protein-gated atrial K <sup>+</sup> channel IKACH is a heteromultimer of two inwardly rectifying K <sup>+</sup> -channel portoins", Nature, Vol 374 pp 135-141 (1995)
	AF	Smith, K.E. et al., "Cloned Human and Rat Galanin GALR3 Receptors", J. Biology Chemistry, Vol 273, No 36 pp 23321-23326 (1998)
	AG	Kaupmann, K et al., "Expression cloning of GABA <sub>B</sub> receptors uncovers similarity to metabotropic glutamate receptors", Nature, Vol. 386 pp. 239-246 (1997)
	AH	Kubo, Y. et al., "Primary structure and functional expression of a rat G-protein-coupled muscarinic potassium channel", Nature, Vol. 364 pp. 802-806 (1993)
	AI	Altschul, S. F., et al., "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", Nucleic Acids Research, Vol. 25 No 17 pp. 3389-3402 (1997)
	AJ	Gahwiler, B. H. & Brown, D. A. et al., "GABA <sub>B</sub> -receptor-activated K <sup>+</sup> current in voltag-clamped CA3 pyramidal cells in hippocampal cultures", Proc. Nat'l Acad Sci USA, Vol. 82 pp 1558-1562 (1985)
	AK	Dascal, N. et al., "Atrial G protein-activated K <sup>+</sup> channel: Expression cloning and molecular properties", Proc. Natl. Acad. Sci. USA, Vol. 90 pp. 10235-10239 (1993)
	AL	Andrade, R. et al., "A G. Protein Couples Serotonin and GABA <sub>B</sub> Receptors to the Same Channels in Hippocampus", Science, Vol. 234 p. 1261 (1986)
	AM	U.K. Gabapentin Study Group "Gabapentin in partial epilepsy", Lancet, Vol. 335 pp. 1114-1117 (1990)
	AN	Cunningham, B.C. & Wells, J.A. "High-Resolution Epitope Mapping of hGH-Receptor Interactions by Alanine-Scanning Mutagenesis", Science, Vol. 244 pp 1081-1085 (1989)
	AO	Howard, A.D. et al., "A Receptor in Pituitary and Hypothalamus That Functions in Growth Hormone Release", Science, Vol 273 pp 974-977 (1996)
	AP	Potenza, M.N. et al., "A Method for Evaluating the Effects of Ligands upon G <sub>s</sub> Protein-Coupled Receptors Using a Recombinant Melanophore-Based Bioassay", Analytical Biochem, Vol 206 pp 315-322 (1992)
	AQ	North, A.R. "Drug receptors and the inhibition of nerve cells", Br. J Pharmacol, Vol. 98 pp 13-28 (1989)
	AU	Bowery, N.G. & Pratt, G.D. "GABA <sub>B</sub> Receptors as Targets for Drug Action", Arzneim-Forsch/Drug Res, Vol. 42 pp 215-223
	AR	Hess, F.J. et al., "Cloning and Pharmacological Charaterization of Human Bradykinin (BK-2) Receptor" Vol. 184 No 1 pp. 260-268 (1992)

<b>Examiner Signature</b>		<b>Date Considered</b>	
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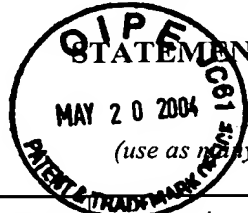
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4

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Initials\*

Cite  
No.

Include name of the author, title, date, page(s), volume-issue number(s) and place of publication.

AS

Mattila, P.S. et al., "The actions of cyclosporin A and FK506 suggest a novel step in the activation of T lymphocytes", EMBO J. Vol. 9, No 13 pp 4425-4433 (1990)

AT

Gonzalez, J.E & Roger, Y.T. "Voltage Sensing by Fluorescence Resonance Energy Transfer in Single Cells", Biophysical Journal, Vol. 69 pp 1272-1280 (1995)

AU

Goa, K.L. & Sorkin, E.M. et al., "Gabapentin", Drugs, Vol. 46 (3) pp 409-427 (1993)

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